

Patent Drawings in General

The Drawing Requirement.....	84
When Drawings Are Not Required	84
If No Drawing Is Submitted With a Patent Application.....	85
Three Types of Patent Drawings	85
Utility Patent Drawings	85
Design Patent Drawings	86
Plant Patent Drawings.....	86
Number of Copies to File.....	86
Formal and Informal Drawings	86
Even Informal Drawings Must Be Clear and Detailed.....	89
Photographs.....	89
Overview.....	89
Engineering Drawings Are Not Suitable.....	90

The patent laws and rules require most patent applications to be filed with drawings. However, there are some situations in which patent drawings are not necessary. This chapter discusses the drawing requirement, when you can get away with not submitting a drawing, and the three types of patent drawings required by the PTO for the various types of patent applications.

The Drawing Requirement

Title 35 of United States Code, Section 113 (35 U.S.C. § 113), which is part of the patent laws, states the requirement for patent drawings this way: “The applicant shall furnish a drawing where necessary for the understanding of the subject matter to be patented.” Since the vast majority of inventions cannot be clearly conveyed by words alone, drawings are necessarily in almost all patent applications.

When Drawings Are Not Required

Drawings may not be required in applications for inventions that can be clearly conveyed by words alone, without any ambiguity. There are very few instances when this can be done, but the following types of inventions are specifically exempt:

- a process, such as a heat-treating process for hardening metal
- a composition, such as a road surfacing material, a chemical, or a drug
- coated articles or products, such as paper or cloth coated with a water-repellent material
- articles made from a particular material or composition, such as nonslip floor tiles made from recycled tires
- laminated structures, such as plywood, and

- inventions in which the distinguishing feature is the presence of a particular material, such as a hydraulic system distinguished solely by the use of a particular hydraulic fluid.

It is impossible to draw some inventions, such as a heat-treating process, articles made from a particular material (the material being the only novelty), and compositions. However, if it is possible to illustrate an invention with a drawing, even though it is adequately conveyed by words alone, your examiner may require you to provide one. For example, coated articles and laminated structures are specifically exempt, but since it is possible to illustrate them with drawings that show the different layers of the invention, the examiner may require you to provide drawings.

Even if your invention is exempt from the drawing requirement, we strongly recommend that you submit drawings whenever possible for the following reasons:

- Examiners like every patent to contain a drawing, if possible, because it makes the invention much easier to understand.
- Drawings please and interest an examiner and show him or her that you, the applicant, are making an effort to present the invention as clearly as possible.
- When you get a patent, the drawing will make it easier to recognize as a relevant patent when others do patent searches, so it will be more effective in warning potential infringers and in preventing others from getting patents on improvements of your invention.
- It communicates your invention better to any company to which you offer your invention for sale or license, and any judge or jury who may ultimately rule on its validity and infringement if you ever have to go to court.

If No Drawing Is Submitted With a Patent Application

A patent application is checked for completeness when it is first received at the PTO. If it is filed without a drawing, and the PTO determines that a drawing is necessary for the understanding of the invention, the application will not be given a filing date because it will be considered incomplete. It will also be considered incomplete and not be given a filing date if it mentions a drawing, but none is submitted. In either case, the PTO will notify you to furnish the drawing. When the drawing is received in the PTO, the application will be given a filing date as of the date of the drawing's receipt.

If you have not furnished a drawing because you felt it wasn't necessary for the understanding of the invention, but the examiner requires you to submit one because it is possible to illustrate or explain the invention better with one, then your application will not be denied a filing date. There is no need to explain why you have not filed a drawing, because the examiner will make a decision based solely on the specification (written description of the invention).

EXAMPLE:

LeRoy files a patent application on a heat-treating process for making softballs that involves specific temperatures and steps. LeRoy explains the process clearly and completely in the specification. His application will be assigned a filing date, because no drawing is necessary for the understanding of the invention. However, months after filing, when the application is taken up for examination, the examiner requires LeRoy to furnish a flowchart-type drawing for illustrating his heat-treating

steps, so that his patent will be an easier-to-understand search reference. LeRoy must provide the drawing in the time period set by the examiner—usually three months—otherwise his application will go abandoned. LeRoy's application will retain its original filing date.

Three Types of Patent Drawings

If your invention is not exempt from the drawing requirement, as discussed above, you must provide a drawing. Different types of drawings are required for different types of patents. Refer to *Patent It Yourself* for additional details and help in choosing the proper type of patent to seek for your invention. Let's briefly look at the specific drawings that must accompany each of the types of patents.

Utility Patent Drawings

Utility patents cover useful inventions, including:

- machines, such as tools, devices, engines, equipment, electronic circuits, and so forth
- articles of manufacture, such as paper clips, pencils, and other simple devices
- methods, such as manufacturing processes, software, and surgical procedures
- compositions, such as chemicals, drugs, and biological material, and
- new uses of old devices, such as using aspirin to speed the growth of swine.

Each utility patent application must include as many drawings as necessary to show every essential feature of the invention, so that its structure and operation can be fully understood. The important elements are labeled with reference numbers, which are referred to in the

written description portion of the application. Illustration 5.1 shows a typical utility patent drawing, which happens to be of a geared, rotary scalpel.

Although the example shows a tangible device, utility patent drawings can comprise graphical representations, such as flowcharts and electronic schematics, to illustrate abstract concepts. Photographs may be submitted instead of line drawings under certain rare conditions. (See Chapters 4 and 8.) Utility patent drawings are discussed in detail in Chapter 6.

Design Patent Drawings

Design patents cover inventions with unique or ornamental qualities, for example, a light fixture design, a shoe design, a camera housing design, or a sofa design. A design patent covers only the aesthetic or ornamental aspect (styling) of an invention.

An invention may be covered by both utility and design patents—the utility patent may cover its utilitarian aspects, while the design patent may cover its styling.

Illustration 5.2 shows a typical design patent drawing, which happens to be of a floppy disc clock. Each design patent application must include several figures to show the invention from all possible viewpoints, so that its appearance can be clearly understood. No reference numbers should be used, because a design patent does not include an extended description of the invention. The drawings must include adequate shading—that is, lines or marks that depict surface contour.

Photographs may be submitted instead of line drawings under certain conditions. (See Chapters 4 and 8.) Design patent drawings are discussed in detail in Chapter 7.

Plant Patent Drawings

Plant patents cover asexually reproducible plants—that is, those that are reproducible by grafting and cutting, such as flowers. Plants with practical uses, such as medicinal herbs, may also be covered by utility patents. Plants that are novel only in appearance, such as ornamental flowers, cannot be covered by utility patents.

Each plant patent application must include as many drawings as necessary to artistically show every distinguishing characteristic of the plant, from as many viewpoints as necessary. If color is a distinguishing characteristic, then color drawings or photographs must be (and usually are) used. (See Chapters 4 and 8 for details on photography.) No reference numerals may be used, because a plant patent does not include a description of the plant, other than a descriptive title. Plant patents are extremely rare, so no drawing sample is provided here.

Number of Copies to File

Only one copy of the drawing(s) need be filed in utility, design, and plant applications where a black-and-white line drawing or photograph is used. However, if color drawings are used, three copies must be filed in utility and design applications and two copies in plant applications.

Formal and Informal Drawings

The PTO requires drawings to conform to a set of strict standards, discussed in detail in Chapter 8. Drawings that are determined by the PTO's Drafting Branch to comply with the standards are considered to be "formal" drawings, whereas those that do not are

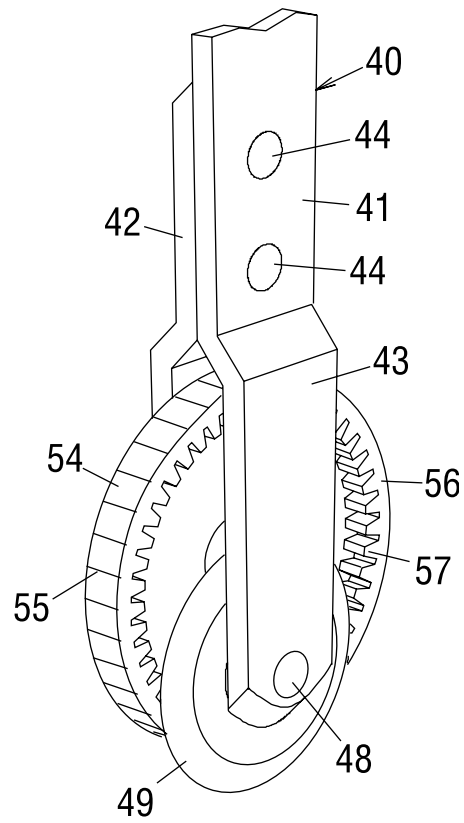


Fig. 9

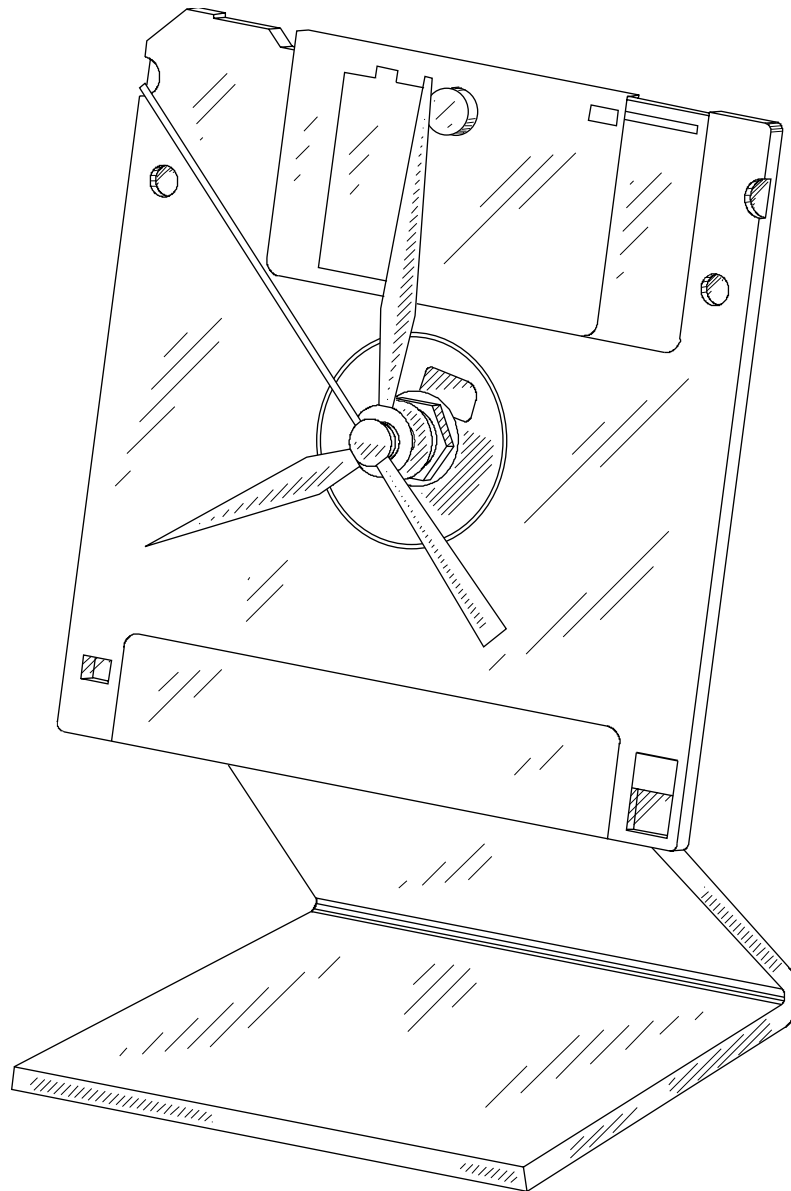


Fig. 1

Illustration 5.2—Typical Design Patent Drawing

considered to be “informal” drawings. Freehand sketches are considered as informal drawings. An application filed with informal drawings will be given a filing date, but formal drawings must be submitted before the application will be examined. Therefore, formal drawings should be submitted with the application to avoid delays.

Even Informal Drawings Must Be Clear and Detailed

If freehand sketches are submitted as informal drawings when you file your application, these sketches should be detailed and clear enough to fully convey your invention. Keep in mind that the formal drawings (required before examination can take place) must show the same information as in the informal drawings.

PTO rules prohibit the addition of new matter to the same application. New matter is any technical information not in the application as originally filed. New matter can be added by filing a continuation-in-part application, but the new information won't get the benefit of the original filing date. Therefore, if an examiner objects to a sketch because it does not show a certain part clearly enough to make it understandable, you cannot make it more distinctive in the formal drawings; new information (new matter) would have to be provided to make the part understandable.

Consider the difference between blurry and sharp photographs of a newspaper. The text

on the newspaper cannot be read in a blurry photograph but it can be easily read in a sharp photograph. The sharp photograph has more “information” than the blurry one. Therefore, informal drawings should be carefully executed and should clearly show the essential details.

Photographs

You can submit photographs, whether black-and-white or color, as informal drawings for your utility or design patent application. Black-and-white photographs are not accepted as formal drawings unless they are photo-micrographs. (See Chapter 4.) The PTO discourages color photographs (and color drawings) because they are difficult and expensive to reproduce. Color photographs may be used only if color is necessary to properly illustrate the invention or design. (See Chapter 4.) You must send a petition and petition fee when submitting color photos (and drawings). (See Chapter 8 for details on such petitions.) If the petition is not granted, formal black line drawings must be submitted to replace the color photo or drawings. Keep in mind that color photos (or color drawings) are approved only on rare occasions.

Overview

The following table summarizes the types of drawings or photos that are accepted as informal drawings, formal utility drawings, or formal design drawings.

	Informal Utility or Design Drawing	Formal Utility Drawing	Formal Design Drawing
Sketches	✓		
Black line drawing that does not comply with all PTO rules (see Chapter 8 for rules)	✓		
Black line drawing that complies with all rules (see Chapter 8 for rules)		✓	✓
Black-and-white photo	✓		
Black-and-white photo when line drawings cannot adequately illustrate invention (no petition required)		✓	✓
Color photo or color drawing	✓		
Color photo or color drawing with granted petition (petition fee required)		✓	✓

Engineering Drawings Are Not Suitable

Inventors who finance the manufacturing and marketing of their inventions usually have a set of engineering drawings or blueprints made. Engineering drawings are created according to engineering standards, which are very different from patent drawing standards. However, they may be submitted as informal drawings, provided they clearly show the invention,

and reference numerals are added to label the parts. As discussed above, if such drawings do not show the invention clearly, they cannot be clarified later, so make sure that they are clear and understandable even if they are filed as informal drawings.

If you have computerized engineering drawings, commonly known as CAD (computer-aided drafting) drawings, you may be able to modify them into formal patent drawings. See Chapter 3 for details on CAD drawings. ●